REMARKS/ARGUMENTS

The present application includes claims 1-3 and 5-20. By this response, independent claims 1, 10 and 18 have been amended. Also, dependent claims were amended to conform to claims from which they ultimately depend. The Applicants respectfully submit that no new matter has been added by this amendment

The Office Action rejected claims 1-17 under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Claims 1-3, 5-20 were rejected under 35 U.S.C. §103(a) as being anticipated by Jensen et al (US 6,666,579) ("Jensen") in view of Hunter et al (US Published Application 2004/0152972) ("Hunter").

Amended Claims

Independent claims 1, 8 10, and 18 have been amended to recite, in various forms, that the processes are tied to a particular apparatus. Support for these amendments can be found in at least paragraphs 0023, 0028, 0041 and 0055 of the published application No. US 2005/0169510. No new matter has been added. As opposed to items shown in cited art, the recited static images are continuously set in motion to create a naturally occurring 3D image. Such systems and methods are not found in the cited art, as explained below, and, thus, for at least these reasons, claims 1-3, 5-20, should be allowable.

Dependent claims were amended to conform to claims from which they ultimately depend.

Claim Rejections – 35 U.S.C. § 101

The Office Action rejected claims 1-17 under 35 U.S.C. 101 as allegedly not falling within one of the four statutory categories of invention. Applicants have amended independent claims 1 and 10 to include apparatuses to positively tie the processes to a statutory category to accomplish the claimed method. Independent claim 1 one has been amended to tie the claimed method to a collection device using an image processing computer, a tracking data processor and

to an output device. Likewise, independent claim 10 has been amended to tie the claimed method to a collection device using an image processing computer, a tracking data processor and an output device. Applicants respectfully submit independent claims 1 and 10 should be allowed. Further, applicants respectfully submit dependent claims 2-9 which ultimately depend from independent claim 1 and dependent claims 11-17 which ultimately depend from currently amend claim 10 should be allowed for at least the same reasons.

Claim Rejections – 35 U.S.C. § 103

The Applicants now turn to the rejection of claims 1-3 and 5-20 under 35 U.S.C. 103(a) as being unpatentable over Jensen et al (US 6,666,579) in view of Hunter et al (US Published Application 2004/0152972).

The Office Action alleges that Hunter discloses "automatically displaying on an output device each image in said collected plurality of static images in an image by image manner-to create an animation, wherein said at least one position and orientation of said at least one instrument is projected on each said image." The Office Action then quotes the following passage from Jensen to support that Jensen discloses the above limitation of claim 1: "The display graphics processor 295 accesses the slice data set memory 290 to display the image slices on the display 250. The display graphics processor 295 also constructs graphical representations of the instrument or tool 24 and overlays the instrument graphic with the image slices on the display 250. The display graphics processor 295 may present multiple two-dimensional image slices simultaneously on the display 250 with instrument graphics superimposed upon each image slice. Col 10, lines 25-50."

Applicants respectfully submit that Jensen does not teach, suggest or disclose animation. Independent claim 1 claims "automatically displaying each image in said collected plurality of

images in an image by image manner-to create an animation, wherein said at least one position and orientation of said at least one instrument is projected on each said image." Jensen does not teach that the images are automatically displayed in an image by image to create an animation. Rather than creating an animation as recited in claim 1 to create 3-D images, Jensen teaches that "The 3-D patient data set may be constructed in step 325 using any one of several algorithms known for constructing three-dimensional data volumes based upon exposures obtained from a cone beam source. By way of example, the 3-D patient data set may be constructed at step 325 using any one of several well known techniques, such as forward and/or back projection techniques. The patient slices and 3-D images constructed in step 335 may be created in accordance with any of several known algorithms such as those used in connection with existing CT systems. The 3-D images constructed at step 335 and displayed at step 340 may be created from the 3-D patient data set based upon any one of several known volume rendering techniques, such as ray casting and the like. Several known techniques exist for constructing data sets of patient slices (such as for sagittal, coronal and axial patient views), segments and 3-D rendered images." (Jensen, col. 12, lns. 27-51). Nowhere does Jensen teach, suggest or disclose that the plurality of static images are displayed in such a manner as to create an animation as claimed in claim 1 of the instant application. Jensen does not teach, disclose or suggest the creation of an animation using static images. Rather Jensen teaches using "any one of several algorithms known for constructing three-dimensional data volumes based on exposures obtained form the cone beam source.

The April 2, 2009 Advisory Action alleges that Jensen teaches that the tracking subsystem 220 processes the coordinate information 225-235 and passes it to an image processing unit 240 which receives exposure frames from the detector 210 and outputs image

frames to the display 250. (Jensen, col. 10, lns. 5-9.) The Advisory Action seemingly equates this to feature in claim 1 of animation. However, outputting images to a display is not the same as "automatically displaying on an output device each image in said collected plurality of static images in an image by image manner-to create an animation." Nowhere does Jensen disclose that the individual images are displayed in an image by image manner to create an animation. Rather, Jensen creates a 3-D image in the image volume processor. Further Jensen discloses that the display graphics processor 295 also constructs graphical representations of the instrument or tool 24 and overlays the instrument graphic with the image slices on the display 250. (Jensen, col. 10, lns. 27-30.) Jensen does not disclose as the Advisory Action alleges automatically displaying on an output device each image in said collected plurality of static images in an image by image manner-to create an animation. Rather Jensen discloses a display graphics processor that displays the images slices on the display.

Further, Hunter does not cure the deficiencies of Jensen. Nowhere does Hunter teach, disclose or suggest animation of 2-D static images. Hunter discloses that "The system 12 may also perform 2D to 3D registration by utilizing the acquired 2D images to register 3D volume images by use of contour algorithms, point algorithms, normalized mutual information, pattern intensity, or density comparison algorithms, as is known in the art." (Hunter, para. 0055). Thus Hunter does not disclose animation. For at least this reason, Applicants submit that neither Jensen nor Hunter, taken alone or in theoretical combination, teaches or reasonably suggests all the limitations of claim 1. Applicants respectfully submit currently amended independent claim 1 is in condition for allowance.

Claims 2-3 and 5-9 ultimately depend from claim 1 and should be allowable at least for the reasons stated.

With regard to independent claim 10, the Office Action alleges that "the limitation of claim 10 has been addressed above except the following "automatically repeating said selecting, computing, projecting, and displaying steps to create an animation using a sequential image by image presentation through said series of 2D static images." The Office Action alleges that Jensen teaches this limitation and cites to the following passage from Jensen in support "the image processing computer 16 performs parallel operations to repeat steps 305-340 to improve upon the 3-D patient data set and also upon the patient slices and 3-D images being displayed." Applicants respectfully submit that that the Office Action's quoted passage from Jensen does not support that Jensen discloses animation. Rather this passage in Hunter discloses that while the 3-D image is displayed at step 340, the dashed lines of Fig. 8 indicate only that while steps 325, 335 and 340 are being carried out, the image processing computer 16 performs parallel operations to repeat steps 305-340 to improve upon the 3-D patient date set. And as pointed out above, Jensen discloses that the 3-D data set is constructed using any one of several algorithms. Nowhere does Hunter teach, disclose or suggest animation of 2-D static images.

As presented above, nowhere does Jensen teach, suggest or disclose an animation is created using a sequential image by image presentation through said series of 2D static images as claimed in claim 10 of the instant application. Further, Hunter does not teach, disclose or suggest the creation of an animation. Hunter does not cure the deficiencies of Jensen. Thus, for at least this reason, Applicants submit that neither Jensen nor Hunter, taken alone or in theoretical combination, teaches or reasonably suggests all the limitations of claim 10. Applicant respectfully submits currently amended independent claim 10 is in condition for allowance.

Claims 11-17 ultimately depend from claim 10 and should be allowable at least for the reasons stated.

Regarding independent claim 18, the Office Action alleges simply that independent claim 18 has been addressed. Applicants respectfully point out that, as presented above, neither Jensen nor Hunter teach, disclose or suggest animation of 2-D static images. Rather, both Jensen and Hunter disclose that 3-D images are constructed using one of several algorithms known for constructing three-dimensional data. Thus, for at least this reason, Applicants submit that neither Jensen nor Hunter, taken alone or in theoretical combination, teaches or reasonably suggests all the limitations of claim 18. Applicant respectfully submits independent claim 18 is in condition for allowance.

Claims 19-20 ultimately depend from claim 18 and should be allowable at least for the reasons stated.

As claims stand amended, Applicants respectfully submit, that Jensen does not teach the claimed features of independent claims 1, 10, and 18. Further, the Applicants respectfully submit that the combination of Jensen and Hunter would not make the claimed invention obvious to one of ordinary skill in the art at the time of the invention.

Claims 2-3, 5-9; 11-17; and 19-20 depend from independent claims 1, 10, and 18, respectively. The Applicants respectfully submit that as claims 1, 10, and 18 should be allowed for at least the reasons discussed above, claims 2-3, 5-9, 11-17, and 19-20 should also be allowed.

CONCLUSION

In view of the above remarks, Applicants respectfully submit that claims 1-3 and 5-20 now pending in the application contain patentably distinct subject matter over all the references of record and are in condition for allowance. Applicants, therefore respectfully request consideration of the pending claims and a finding of their allowability. A notice to this effect is respectfully requested. Please feel free to contact the undersigned should any questions arise with respect to this case that may be addressed by telephone.

The Commissioner is authorized to charge any additional fees or credit overpayment to the Deposit Account of GTC, Account No. 070845.

Respectfully submitted,

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/Dennis P. Hackett/

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